

After a series of devastating floods, the people of Pattonsburg rebuilt their town on higher ground – and they did it sustainably. Here's how "weird, liberal ideas" ended up in the plan

Skipping Town

When the rains first started in June of 1993, everyone in

by Steve Lerner

Pattonsburg, Missouri began to keep an eye on the river. The Grand River had jumped its banks before without flooding the town, but by July, town residents and others up and down the Missouri and Mississippi rivers were packing their favorite possessions and moving uphill to escape the rising waters.

Not everyone, however, was in a hurry to get out of Pattonsburg. One farmer simply took his armchair upstairs and rode out the flood on the second floor. This "flood macho" was also demonstrated by local patrons of the Double Eagle bar, who sat playing dominoes as the waters inched over their boot tops. The owner kept the bar open as long as she could, but abandoned ship when the tables began to float by with the bottles still on them.

When the flood waters finally receded, the residents of Pattonsburg fixed their houses and moved back in. But no sooner had they buried their dead and scraped the mud off their floors when a second, more devastating flood rolled into town.

The floods of 1993 were hardly the first major inundation

that Pattonsburg residents had experienced. Since it was founded in 1845,

Pattonsburg has been flooded at least 30 times, suffered a devastating fire, and been partially destroyed by a tornado. In the 1970s, the residents were hit by an economic catastrophe more powerful than any natural disaster: an interstate highway, I-35, was built a few miles east of Pattonsburg. Until then, Pattonsburg had drawn much of its commerce from

The last straw – after the flood of '93, residents decided to move Pattonsburg



Route 69, a narrow two-lane blacktop.

When the interstate bypassed Pattonsburg, businesses in town shriveled up. The intermittent flooding didn't help either. Once a bustling town of 2,000 residents, Pattonsburg's population dwindled to 316. Evidence of the town's abandonment could be seen everywhere: many homes were boarded up, and along Main Street the grocery store, pizzeria, and a host of other enterprises had gone out of business. Yet it wasn't until the great flood of 1993 – the nation's costliest flood with \$12 to \$16 billion in damages in nine states – that Pattonsburg residents finally decided to move to higher ground.

Ideas into action

While the flood was having its way with the residents of Pattonsburg, Nancy Skinner, an entrepreneur who sold environmentally safe paint, was warm and dry in her apartment in Chicago watching television coverage of the massive Midwestern flooding. As news of the devastation unfolded, Skinner had an idea: since the government was poised to spend \$6 billion on flood relief in the Midwest, why not use the funds to relocate communities out of the flood zone so that in the future, federal dollars would not be needed to bail them out again?

While the federal government can't move L.A., it *can* move a small town like Pattonsburg

And why not rebuild these communities using the best available environmental and energy-efficient technologies?

These were reasonable questions, but for most people this kind of brilliant idea would have faded within an hour. Skinner, however, is a persistent woman whose bouts of enthusiasm have staying power. Over the following weeks she ran up an impressive phone bill calling the Environmental Protection Agency, the Federal Emergency Management Administration (FEMA), the Department of Interior, the White House Office on Environmental Policy, and a host of other bureaucracies. Her suggestion was generally received as a good idea,

but the federal employees she spoke with just referred her to some other bureaucrat.

Skinner's telephone marathon continued until she spoke with Bill Becker at the Department of Energy, whose unique experience permitted him to appreciate Skinner's suggestion. As a former resident of Soldiers Grove, Wisconsin, he had been instrumental in lobbying to see his own beleaguered town moved out of the flood zone to higher ground in 1978.

Instead of just rebuilding the Soldiers Grove business district along conventional lines, government relief funds were spent constructing passive solar, superinsulated, energy-efficient buildings that were cost-effective. The town passed the first solar ordinance in the country requiring that newly constructed commercial buildings derive at least half of their heating from the sun. Planners also strategically planted trees in a pattern that blocked winter winds while channeling summer breezes. From the Soldiers Grove experience, Becker learned that the practical and frugal residents of small Midwestern towns could be convinced to relocate and rebuild along ecologically sustainable lines.

When Skinner and Becker connected over the telephone, two of the pieces for Skinner's plan fell into place. What they needed was someone who could pull together specialists from around the nation who knew how to design and build an environmentally friendly and energy-efficient community. Becker knew just the person for the job.

Robert Berkebile is a prominent Kansas City architect and an expert on the environmental costs of building materials and various construction methods. By the time DOE's Bill Becker called him in 1994, Berkebile had become one of the focal points for a loose network of green architects and experts in a number of fields. Through this network, Berkebile assembled a team of professionals who could travel to flood-devastated towns and help the residents plan cost-effective, ecologically sustainable communities.

Learning from the past

The design team first met in January of 1994 at the Johnson & Johnson Wingspread Conference Center in Racine, Wisconsin. To keep the 40 experts grounded, Dennis Knobloch, the mayor of Valmeyer, Illinois, was invited. Valmeyer (population 900) was a town largely destroyed by the flood

of 1993, whose residents were living in trailers provided by FEMA. The government was providing \$30 million in disaster relief to relocate the town to higher ground.

While he had been reluctant initially to attend the conference, by the end of the presentations Knobloch had heard enough useful ideas that he invited the design team to use Valmeyer as a site for their first demonstration project.

Unfortunately, the planning process in Valmeyer was so far advanced that the design team had only marginal influence. Valmeyer's regional planners had already designed a suburban cul-de-sac community – the streets were laid out in the wrong direction to take advantage of the sun. Nevertheless, some modifications were made in the plans for the new town, including the use of ground-source heat pumps in a couple of buildings and improved energy efficiency measures. "It was a very good learning experience for us, even though the results were not what they might have been," Becker concludes.

Fortunately, Skinner (who now runs Daybreak International, a non-profit organization that consults on sustainability projects) had invited David Warford, the mayor of flood-damaged Pattonsburg to Valmeyer. She had heard from a FEMA official that the Pattonsburg residents' idea of how to relocate out of the flood zone was to move their town to an off-ramp of an interstate and throw up some truck stops to capture the passing vehicular business.

It turned out to be a good match. Pattonsburg's Mayor Warford was looking for all the help he could find, and at the end of the workshop, offered Pattonsburg as the next demonstration project for the design team. He pointed out that the residents of Pattonsburg were not wedded to a car-oriented suburban design.

Making their move

In Bettie's Cafe in downtown Pattonsburg, a half-dozen farmers are sitting around a table sipping coffee and eating breakfast. On the wall above them is a poster for the Road Kill Cafe, offering delicacies such as "smear of deer." In this flood-cursed

town where 65 percent of the residents are over 60 years old, the farmers are debating plans to relocate their town out of the flood plain.

Some are in favor of the relocation. A young farmer who grew up in Pattonsburg sees it as the town's only hope. The town will continue to die until it moves to a place where businesses will feel safe without fear of being flooded out, he says.



But not everyone is anxious to agree. "Most people here can't afford to move," says a man wearing knee-high rubber boots. "We have a lot of widows and elderly people here on fixed incomes living in houses half chewed-up by termites. If you tried to move those houses, they'd turn into dust. Besides, why should we move?" he asks, shrugging his shoulders. "I've lived with the flooding all my life. It's just a part of living here. It's a hell of a lot better than living in Los Angeles with those earthquakes."

While the federal government can't move L.A., it can move a small town the size of Pattonsburg. Furthermore, a study directed by the Army Corps of engineers found that federal flood control efforts would be less expensive and more effective if people were moved out of flood plains. Experimenting with this flood relief strategy, government officials agreed to finance the largest post-flood relocation in the nation's history. Pattonsburg was an obvious candidate for one of these efforts, and \$12 million was set aside to move the town two miles to a higher elevation.

Designers and residents meet for a "visioning session"

Pattonsburg officials recognized that this large infusion of federal funds into a small town like theirs was unlikely to reoccur any time soon. To help them invest the money wisely, Berkebile's design team arrived in Pattonsburg in September of 1994 for a three-day planning session. The designers were scheduled to listen to what residents wanted their new town to look like at a "visioning session," present the residents with an expanded menu of options, and finally draw up a town plan.

Convincing skeptical Midwesterners to move their town was a task only slightly less daunting than negotiating an international nuclear arms reduction treaty. The first meeting, held in the Pattonsburg school gymnasium, was led by Milenko Matanovic, a consultant from the Pomegranate Center for Community Innovation based in Issaquah, Washington. After showing a documentary about Soldiers Grove, Wisconsin, Matanovic pinned a large map of Pattonsburg to the wall. He began to solicit ideas about what residents treasured in their community and wanted to incorporate in New Pattonsburg: some people liked the feel of walking down Main Street; others had grown accustomed to the faded red brick facade of the stores; some liked having separate entrances to each of the shops; someone spoke lyrically of a neighbor's garden; another resident didn't want to lose the sound of the town whistle that blows morning, noon, and night. The list of town treasures grew.

"I thought passive solar energy was just some weird liberal concept that had nothing to do with me"

Residents and members of the team of experts then visited the site of the new town, 640 acres purchased from several local farmers. The land stood on a hill, several miles from the old town and about a quarter of a mile from the interstate highway.

Standing at the edge of a cornfield, the designers took note of a line of trees they wanted to save. They brought with them large topographical maps of the site that helped them to plot precisely how stormwater drained from the land. From this in-

spection of the site, they recommended that the existing contours be preserved as far as possible so that the land would continue to drain naturally. This would save the town the considerable expense of building and maintaining a conventional stormwater system. Existing ponds could be augmented to work as detention ponds that would permit much of the stormwater to go back into the ground instead of running off the land. If the right plants were grown in this constructed wetland, contaminants in the stormwater could be filtered out so that the runoff from the town would actually be cleaner than the water currently draining from the cornfield.

Local farmers and rural residents easily grasped the advantage of using the lay of the land to drain stormwater from their new town. "We come from a farming community and a lot of these ideas are not so different from things farmers do regularly," says Mayor Warford. "People in farming communities are very aware of the cycles of nature and they tend to take the long view. When you make your livelihood from the soil you realize that you have to protect it or you won't have an income any more."

An enlightened way to build

Planners also suggested that the streets of the town be oriented along an east-west axis so the houses could take advantage of passive solar gain during the cold Missouri winters. Planting deciduous trees on the sunny side of the house would shade them in the summer while allowing the sun to shine through the bare branches for warmth in the winter. Furthermore, creating a tree line of windbreaks would protect the houses during the winter, channel summer breezes, and muffle noise from the highway.

The town was designed to be pedestrian-friendly – everyone was no more than a five-minute walk from downtown. Housing for the elderly was sited in the center of town so that older residents would not be isolated from the town's daily activities. The commercial and industrial zone was positioned closest to the interstate, while its Main Street was set farther back from the highway where it would have a quieter, slower-paced, feel to it. Following a neotraditional town design, planners also attempted to recreate some of the best aspects of the old Pattonsburg's Main Street. The retail section of the new town, for example, would be a single-walled

structure, but each business would have its own entrance and the height of the facade would vary as it did in the old town.

To keep their new town on a sustainable trajectory, Pattonsburg residents were willing to put their environmentally friendly principles into a written code. Pattonsburg's town council is poised to adopt a number of covenants and restrictions drawn up with the help of Dan Slone, an environmental attorney from Richmond, Virginia. In the prologue to these new regulations, the town of New Pattonsburg commits itself to "encourage, and in some instances require, the use of energy-efficient designs and sustainable construction techniques within its limits."

These covenants and restrictions ensure that while New Pattonsburg will not be a perfect model of sustainability, at least it is headed in the right direction. "We could try to turn Pattonsburg into a utopian community but it wouldn't work," says Becker. "In the end it has to be what the community can afford to live with. What we hope is that New Pattonsburg will be far more sustainable than it would have been without input from the design team. We hope that it will be a model of an enlightened way to build a town."

A greater motivation

Both the Pattonsburg and the Valmeyer planning and relocation efforts demonstrate that sustainable development is more than just an attractive theory. The design team found that it could "sell" Midwesterners on a variety of cost-efficient strategies.

Nancy Skinner recalls an interview with a resident in Valmeyer who said: "When members of the design team first talked about passive solar energy, I thought this was just some weird liberal concept that had nothing to do with me. But when they explained what it meant in practical terms – that it was just how you orient your house in relation to the sun and the type of materials you build with – then it made perfect sense to me."

When surveyed, residents of Pattonsburg voted

to build a resource-efficient town largely for economic reasons. When they saw the film of what people did in Soldier's Grove, they realized they could save money building energy-efficient homes. "That message played very well in Pattonsburg. People said that they didn't care how freaky some

of these newfangled ideas sounded as long as they worked and could save them money," Skinner observes.

But they also had a motivation that was greater than saving money. Mayor Warford says that the relocation helped change his thinking.

"It sensitized me to environmental issues. I was aware of some of these issues before, but now I am seeing solutions to problems instead of just problems."

Warford recalls a trip he took to Washington, DC to search for funds to move Pattonsburg. While in Washington, he was struck by the large number of homeless people. Warford has a particularly strong recollection of standing outside the Smithsonian when a teacher advised his group of students to look the other way and pretend the homeless people outside the building did not exist.

"Part of the problem in this country is that we ignore problems and hope they go away," he says. "We can all put our heads in the sand and say there is no problem with the ozone layer. But I am sure not going to tell my 13-year-old boy to pretend that these homeless people don't exist. I'm going to say, 'Aren't we fortunate we are not in the same situation, and what can we do to help?' Of course, one person can't help the homeless people, but maybe as a nation we can. And maybe as a nation we can help solve the environmental problems we face today." ▲

Steve Lerner is research director of Commonweal, a non-profit organization that focuses on environmental and health issues. This article is adapted from a chapter in his book, Eco-Pioneers: Practical Visionaries Solving Today's Environmental Problems. Copyright © 1997 Massachusetts Institute of Technology.



The Pattonsburg move sensitized residents to environmental issues